REMARKS

In the January 12, 2007 Office Action, claims 1-23 (all pending claims) were rejected. This Response amends claims 1, 2, 4, 6, 9, 10, 12, 14, 16, and 19, and cancels claims 5, 7, 8, 13, 17, 20, and 21 (without prejudice or disclaimer). After entry of the foregoing amendments, claims 1-4, 6, 9-12, 14-16, 18, 19, 22, and 23 (16 total claims; 4 independent claims; no additional claim fees due) remain pending in the application. Reconsideration of the application is respectfully requested in view of the above amendments and the following remarks.

Claims 1-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Moreton et al., USPA 2004/0013128, ("Moreton") in view of Proctor, USPA 2003/0048770 ("Proctor") and Flint et al., USPA 2003/0222823 ("Flint"). Applicant respectfully traverses this rejection.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. Of course, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. Applicant respectfully submits that the Examiner has not met all of the above criteria.

Moreton discloses a WLAN access point ("AP") and a method to control the AP to allow multiple clients that utilize different wireless standards (i.e., different wireless frequency bands) to transmit and receive data in a switched manner [Moreton, at Abstract]. Moreton teaches an AP and a method where two different wireless bands can be supported by the AP, but only one at a time [Moreton, at paragraphs 0014, 0071, and 0091]. This characteristic is the core focus of the Moreton disclosure.

Although Moreton generally discloses an AP and a method that utilizes two different frequency bands in implementing a WLAN, Moreton utilizes contention periods (CPs) and contention free periods (CFPs) in an alternating fashion between the two bands to ensure that one band remains clear while the AP communicates with mobile clients using the other band (and vice versa). The right side of Moreton's FIG. 7 illustrates how the Moreton system utilizes the CPs and CFPs to support the two frequency bands (referred to as channel A and channel B). A CFP (labeled 750 in FIG. 7) represents a time period during which mobile stations will not transmit anything unless requested to do so by the AP [Moreton, at paragraph 0088]. The CFP

750 allows the AP to keep channel A clear (by not requesting data from the mobile stations) while it communicates using channel B. Notably, during the CFP 750, the AP switches to support devices on channel B – the CP labeled 755 represents the time period during which mobile stations can communicate with the AP using channel B. The important feature here is that the period for CFP 750 temporally corresponds to the period for CP 755. In other words, during CP 755, the AP does not communicate with mobile stations using channel A, and the AP only communicates with mobile stations using channel B. FIG. 7 depicts a subsequent period where channel A has a CP and channel B concurrently has a CFP. During this time period, the AP does not communicate with mobile stations using channel B, and the AP only communicates with mobile stations using channel A. [Moreton, at paragraphs 0088 and 0091]. This feature of the Moreton system allows the AP to control the mobile stations such that the AP can communicate using one frequency band without the risk of missing data that might otherwise be concurrently transmitted by mobile stations using the other frequency band [Moreton, at paragraph 0071].

Again, when the Moreton AP is using channel A (a first frequency band), it ensures that there will be no traffic on channel B (a second frequency band) [Moreton, at paragraph 0096]. Likewise, when the Moreton AP is using channel B, it ensures that there will be no traffic on channel A. Furthermore, when the Moreton AP communicates using channel B, data traffic passes in both directions (i.e., upstream and downstream) between the AP and the mobile stations [Moreton, at paragraph 0097]. After the Moreton AP switches to communicate using channel A, data traffic again passes in both directions between the AP and the mobile stations [Moreton, at paragraph 0099]. In this manner, the Moreton AP alternates between the two frequency bands, but never supports both frequency bands at the same time.

For comparison, the system embodiment described in Applicant's specification utilizes a high frequency band for downstream payload transmissions from the AP to MUs, and a low frequency band for upstream payload transmissions from MUs to the AP. In contrast to the Moreton system, the embodiment described in Applicant's specification can handle downstream payload transmissions using the high frequency band and upstream payload transmissions using the low frequency band during the same time period. In other words, Applicant's AP does not switch between the two frequency bands, and Applicant's AP does not prevent data

communication on one frequency band while supporting data communication on the other frequency band.

Independent claim 1 now recites a system having: an AP that transmits downstream payload data to mobile units exclusively on a first wireless band during a time period; a first mobile unit configured to transmit its upstream payload data to the AP exclusively using a second wireless band during the same time period; and a second mobile unit configured to transmit its upstream payload data to the AP exclusively using the second wireless band during the same time period. In contrast, as explained above, the Moreton system is intentionally and specifically designed to not enable communication using both bands during any given time period. In further contrast, the Moreton system is intentionally and specifically designed to support both upstream and downstream traffic using the selected frequency band (i.e., either channel A or channel B); Moreton neither teaches nor suggests the exclusive use of one band for downstream payload traffic and the exclusive use of the other band for upstream payload traffic during the same time period.

The Office relies on Proctor for its disclosure of a particular antenna configuration. However, Proctor does not cure the deficiencies of Moreton discussed above. Proctor discloses a technique for using directional antennas in wireless data transmission systems [Proctor, at Abstract]. The purpose of Proctor is to utilize a directional antenna array to improve the signal integrity to those clients in the network [Proctor, at paragraph 0007]. Although Proctor is dealing with wireless networks, it embraces the RTS/CTS mechanism [see Proctor, at paragraphs 0014-0018]. Thus, the method in Proctor does not eliminate the need for preliminary broadcasts used to reserve a channel, such as the RTS/CTS mechanism, but incorporated such a mechanism into its design.

The Office relies on Flint for its disclosure of a duplexer that is utilized with a dual-band antenna. The Office concludes that "Flint teaches transmitting payload data to a first wireless device exclusively on the second wireless band during a time period of transmission and simultaneously with the transmission of the payload data by the first wireless device," citing to Flint at paragraph 0063. Claim 1, however, has been amended to clarify that a second mobile unit transmits its upstream payload data to the AP exclusively on the second wireless band during the same time period and simultaneously with the transmission of downstream payload data on the first wireless band from the AP to a first mobile unit. In other words, the AP uses

the first band to transmit downstream payload data to the first mobile unit while at the same time using the second band to receive upstream payload data from the second mobile unit. In contrast, Flint merely describes the use of a duplexer that can allow two communication systems to work simultaneously. This is akin to having two separate transceivers in a single laptop computer. Flint is silent with respect to the details of upstream and downstream traffic and the specific bands used for upstream and downstream traffic, as recited in claim 1. Accordingly, Applicant respectfully submits that Flint does not teach or suggest the specific limitations recited in claim 1.

Furthermore, Moreton teaches away from the proposed combination that includes Flint. In particular, Moreton specifically stresses the importance of preventing communication and data traffic on one channel while the AP is using the other channel (and vice versa). Consequently, Moreton teaches away from the simultaneous use of two wireless bands as required by claim 1. For similar reasons, the Moreton system would not operate as intended if it were modified to support the simultaneous use of one band for downstream transmissions from an AP and another band for upstream transmissions to the AP. Such operation would require the core functionality of the Moreton system to be completely reworked.

For at least the above reasons, the proposed combination of Moreton, Proctor, and Flint fails to teach or suggest each and every limitation recited in independent claim 1. In addition, one skilled in the art would not be motivated to combine Moreton with Proctor and Flint. Thus, it is respectfully submitted that the 35 U.S.C. 103(a) rejection of claim 1, and the claims depending therefrom (claims 2-4, and 6) should be withdrawn.

Similar to claim 1, claim 9 recites a method where the AP transmits downstream payload data to mobile units exclusively using a first band during a time period, without having to reserve the first band, and without sensing for communication activity on the first band prior to transmission. In addition, the method recites that, during the same time period and simultaneously with the transmission of the downstream payload data, a mobile unit transmits upstream payload data to the AP exclusively on the second band. Therefore, for at least the reasons discussed with respect to claim 1, it is respectfully submitted that the 35 U.S.C. 103(a) rejection of claim 9, and the claims depending therefrom (claims 10-12, 14, and 15) should be withdrawn.

Similar to claim 1, claim 16 recites an AP wherein downstream payload data is uni-directionally transmitted to mobile units during a time period, exclusively using the first band, without having to reserve the first band prior to the transmission of the payload data, and without sensing for communication activity on the first band prior to transmission. Moreover, claim 16 recites that upstream payload data is received from mobile units during the same time period, exclusively using the second band. Therefore, for at least the reasons discussed with respect to claim 1, it is respectfully submitted that the 35 U.S.C. 103(a) rejection of claim 16, and the claims depending therefrom (claims 118 and 19) should be withdrawn.

Claims 22 and 23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Moreton in view of Flint. Applicant traverses this rejection.

Independent claim 22 recites a method for wireless communication. Claim 22 recites that a first device transmits downstream payload data to a destination device using a high frequency band during a time period, and that the downstream payload data is transmitted as a plurality of sequential downstream data transmissions. In addition, claim 22 requires that the transmission of the downstream payload data occurs without having to make preparatory transmissions to reserve the high frequency band prior to transmission (similar to that recited in claim 1). In this regard, Applicant's FIG. 4 depicts an example where three sequential downstream data transmissions (D1, D2, and D3) are sent from an AP to a destination device (MU 20). Notably, claim 22 also recites that during the same time period and between two of the sequential downstream data transmissions, the first wireless device also receives upstream payload data from at least one additional wireless device using a low frequency band. In this regard, Applicant's FIG. 4 depicts an example where the AP receives upstream payload data (U2) from a wireless device (MU 21); in this example, the upstream payload data U2 is received by the AP between the downstream data transmissions D1 and D2.

As discussed above, Neither Moreton nor Flint, alone or in combination, suggests or teaches each and every limitation recited in independent claim 22. As also discussed above, the prior art actually teaches away from the proposed combination of Moreton and Flint, and a modification of the Moreton system as proposed by the Office would render the Moreton system inoperable for its intended purpose. Thus, it is respectfully submitted that claim 22 is patentable over the combination of Moreton and Flint. For at least the same reasons, claim 23, which

depends from claim 22, is also patentable over the combination of Moreton and Flint. Accordingly, Applicant requests the withdrawal of the §103 rejection of claims 22 and 23.

In conclusion, for the reasons given above, all claims now presently in the application are believed allowable and such allowance is respectfully requested. Should the Examiner have any questions or wish to further discuss this application, Applicants request that the Examiner contact the undersigned attorney at (480) 385-5060.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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